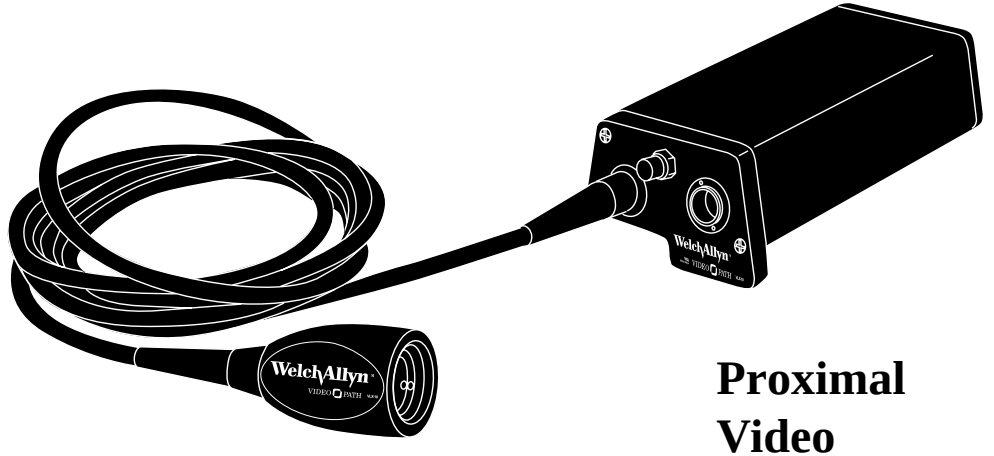
VIDEO PATH®

Welch Allyn™



Proximal Video Camera

PC-10
(Model 65170)

PC-20
(Model 65180)

Operating Manual

Thank you for your purchase of a Welch Allyn VideoPath® Proximal Video Camera. The operating and maintenance instructions found in this manual should be followed to ensure many years of reliable service. Please read these instructions thoroughly before attempting to use your new VideoPath® Proximal Video Camera. It is imperative that instruction manuals for associated equipment, including the VLX-10 and VLX-20 Light Sources, be read and understood in detail.

WARNING: The user of this equipment should be thoroughly trained in the medical procedures appropriate to the equipment. Furthermore, time should be taken to read and understand these instructions before performing any procedures. Instructions for other equipment used in conjunction with any VideoPath Proximal Video Camera (e.g. light sources) should also be read and understood. Failure to do so may result in injury to the patient and/or damage to the instrument.

While this manual describes the recommended protocol for inspecting and operating the equipment, it does not outline procedural techniques.

CAUTION: Federal (USA) law restricts this device to sale by/to or on the order of a physician or other appropriately licensed medical professional.

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Conventions

Warning alerts the user to possible serious injury, death or other adverse reaction associated with the use or misuse of the device.

Caution indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It also alerts against unsafe practices.

NOTE provides supplemental information to the text and indicates a potentially hazardous situation which, if not avoided, may result in property damage. Additionally, it highlights important information on the use of the equipment.

Symbols

Attention: Consult Operator's Manual for additional information.

Caution: High-intensity light.

TYPE BF

Type BF equipment

Listed Product - ETL Laboratories

IPX7 **IPX7 Protected against the effects of immersion**

Caution: Surface temperatures on patient-contacting probes are likely to exceed 41°C

Warning: Before using, check outer portions of the endoscope for unintended rough surfaces, sharp edges, or protrusions which may cause a safety hazard

Warning: The illumination fiber bundle used with this system must provide electrical isolation between patient-contacting probes and the VideoPath® Proximal Video Camera (no grounding shield or braid)

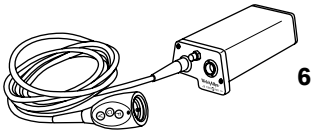
Caution: The Proximal Video Camera is to be connected to equipment listed to IEC 601-1 and in compliance with IEC 601-2-18

VideoPath® Proximal Video Camera

Feature	PC-10 Control (Model #65170)	PC-20 with Function Control (Model #65180)
Pixels	380,000	380,000
CCD Size	1/2 inch	1/2 inch
Lines of Resolution	Greater than 470 lines	Greater than 470 lines
Signal System	NTSC Color System	NTSC Color System
White Balance Control	Included	Included
Minimum Illumination	4.5 lux at f1.2	4.5 lux at f1.2
Available Video Adapters	Standard and Zoom C-mount couplers	Standard and Zoom C-mount couplers
Function Control Switches	None	Freeze, Copy, Video
Operating Temperature	+10°C to +40°C (50°F to 104°F)	+10° C to +40°C (50°F to 104°F)
Relative Humidity	30-75%	30-75%
Safety Approvals	UL 2601-1, IEC 601-2-18	UL 2601-1, IEC 601-2-18

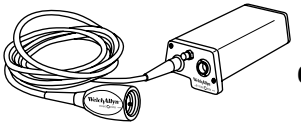
Components

VideoPath® Proximal Video Camera Set Includes:



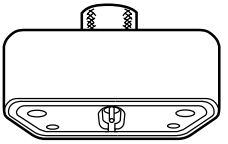
65180 PC-20 Video Camera with Cable and Function Controls

or

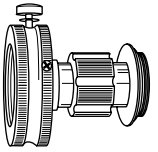


65170 PC-10 Video Camera with Cable

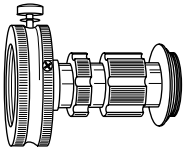
Optional Accessories



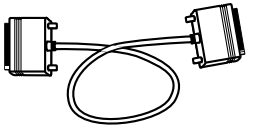
31028 Soaking Cap



65152 Standard C-mount Video Coupler

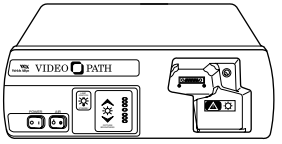


65153 Zoom Eyepiece Coupler

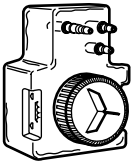


65158 RS-232 Communication Cable

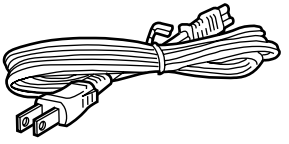
VLX-10 and VLX-20 Light Sources Include:



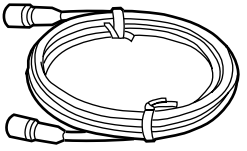
40500 or 45500 Light Source



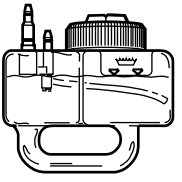
45510 Water Bottle



761076-0 Power Cord



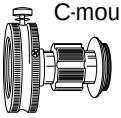
45512 S-Video Cable

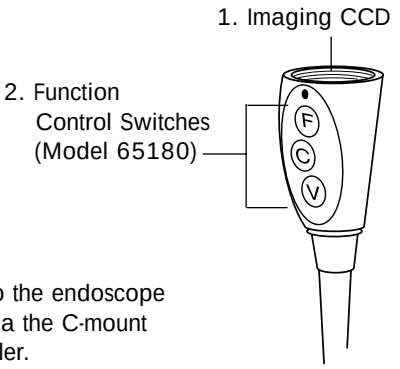


45520 Cleaning / Disinfection Bottle

Nomenclature and Function

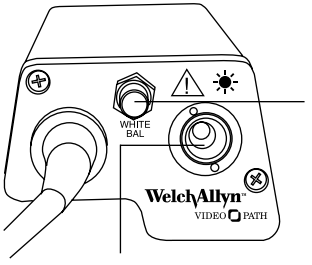
VideoPath® Proximal Video Camera

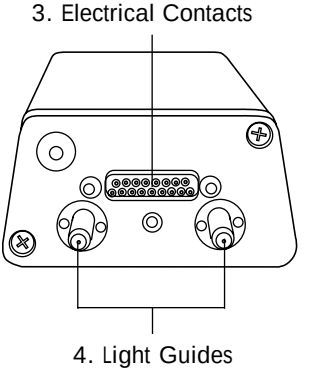




Camera Head Contains:

Name	Function
1. Imaging CCD	Connects to the endoscope eyepiece via the C-mount video coupler.
2. Function Control Switches (Model 65180)	Controls the peripheral video component such as the video printer.

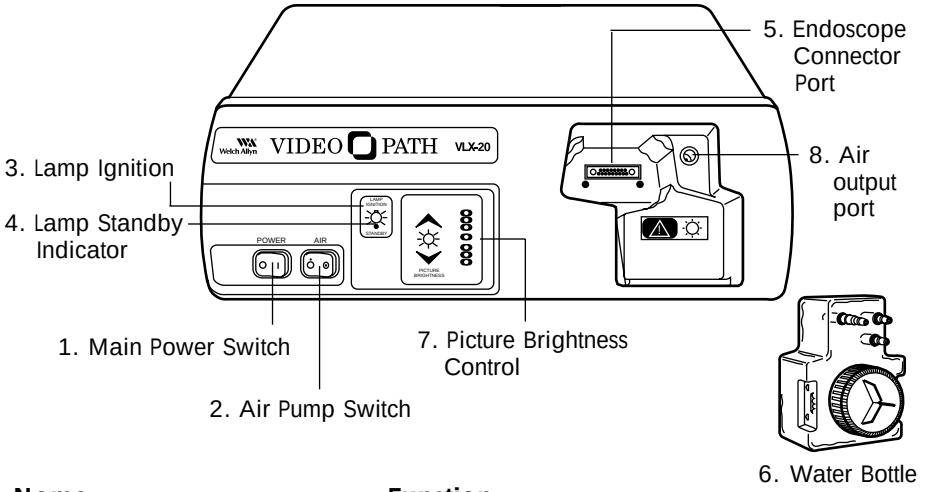




Light Guide Connector Contains:

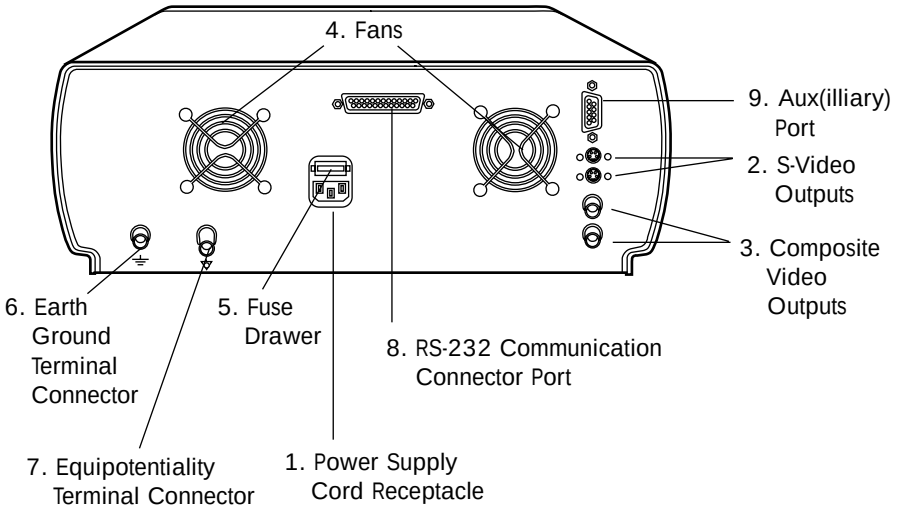
Name	Function
3. Electrical Contacts	Provide power to the VideoPath Proximal Video Camera and provides the pathway for video signal input into the light source.
4. Light Guides	Couple to lamps in light source to provide illumination.
5. Light Guide Input Port	Input port for the endoscope light guide connector.
6. White Balance Switch	Used to white balance the camera to properly match the endoscope optical system.

Light Source – Front View



Name	Function
1. Main Power Switch	Primary power control for the light source. If not activated, the VideoPath Proximal Video Camera as well as other controls will not function.
2. Air Pump Switch	Air pump should not be used with the VideoPath Proximal Video Camera.
3. Lamp Ignition	Activates the lamps when the switch is depressed and the main power switch is on.
4. Lamp Standby Indicator	When the LED blinks, lamps cannot be ignited even if the lamp ignition is depressed.
5. Endoscope Connector Port	Accepts VideoPath connector terminal to transmit light and electrical signal through the VideoPath.
6. Water Bottle	Should not be used with the VideoPath Proximal Video Camera.
7. Picture Brightness Control	Since the VideoPath Proximal Video Camera contains an electronic shuttering system to control the illumination level automatically, the picture brightness control is not functional when the VideoPath Proximal Video Camera is utilized with the light source.
8. Air Output Port	Air pump should not be used with the VideoPath Proximal Video Camera.

Light Source – Back View



Name	Function
1. Power Supply Cord Receptacle	Couples with the power cord, which should be plugged into a 110-120 VAC hospital grade outlet.
2. S-Video Outputs	Outputs S-Video or Y/C, 4 position Mini-DIN.
3. Composite Video Outputs	Outputs NTSC (composite video), BNC connector.
4. Fans	Pulls room air into the light source for forced air cooling.
5. Fuse Drawer	Opens for replacement of main fuse.
6. Earth Ground Terminal Connector	Provides a terminal which is connected to earth ground through the VLX-20 line cord (1/4-36 UNS-2A thread).
7. Equipotentiality Terminal Connector	Accepts ground connector from electrosurgery equipment to provide a secondary or redundant ground path.
8. RS-232 Communication Connector Port	Communication port for use with video printers
9. Aux(illiary) Port	No function. Future capability.

Prior To Initial Use

Before preparation and set-up of this equipment, check all components received against the list of components (see Components section) to verify a complete set. If parts are missing, please notify Welch Allyn. Review the nomenclature, set-up, operations and cleaning sections to become familiar with the equipment.

Specifically inspect:

VideoPath® Proximal Video Camera

Camera Head – for any cracks, dents, scratches and debris.

Camera head cable – for any dents, tears or cracks.

Light guide connector – for any cracks, dents, scratches and debris.

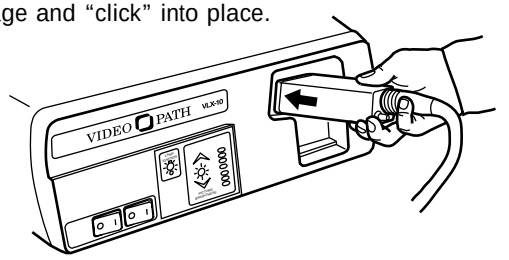
Light Source

Cabinet – for any dents, scratches or other abnormalities.

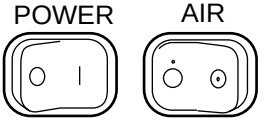
Operations

The methods and techniques of endoscopy are well-defined and documented. Endoscopy training seminars and preceptor programs are also in existence world-wide. No attempt is made in this manual to outline any medical procedures. Before beginning a procedure, the physician should be familiar with it and all possible relative contraindications.

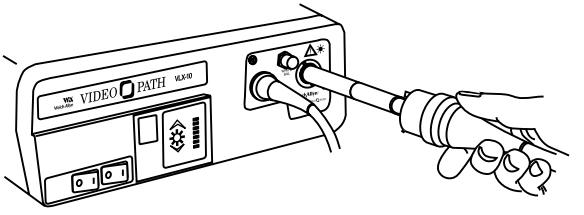
1. Plug the VideoPath® Proximal Video Camera connector terminal into the endoscope connector port of the light source. The Video Camera connector terminal should fully engage and "click" into place.



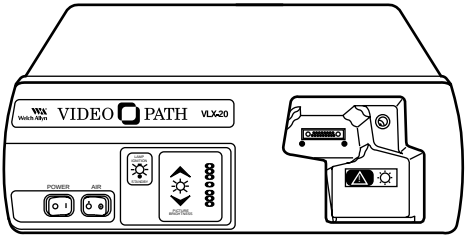
2. Activate the Power switch on the front panel. The green Lamp Ignition/Stand-By light will blink for approximately 11 seconds. Once the LED stops blinking, the lamps are ready to be ignited.



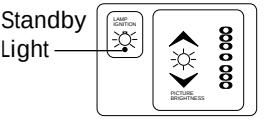
3. Insert the endoscope light guide cable into the light guide post receptacle.



4. Press the Lamp Ignition Switch. The lamps will ignite and the Lamp Ignition/ Standby light will go out. The lamps require 11 seconds to warm up. This length of time will be indicated by the center LED of the Picture Brightness Indicator, which blinks until the lamps are fully warmed up, and the system is ready for use.

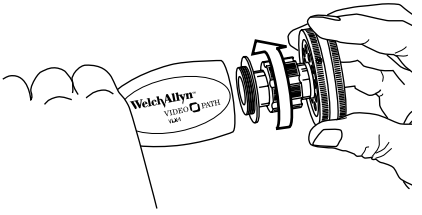


NOTE: If the Light Source is powered up without having the VideoPath Proximal Video Camera attached, the Lamp Ignition Standby LED will remain blinking and lamp ignition cannot occur.

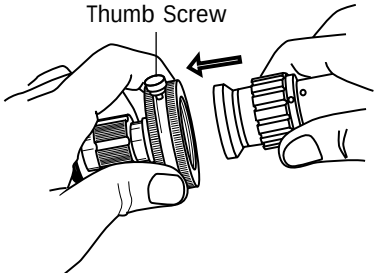


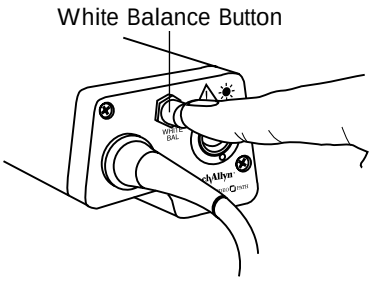
WARNING: Once lamps have been lit, do not remove the instrument from the light source without turning the main power switch off or putting the lamps on Stand-By by pressing the Lamp Ignition switch. If the VideoPath Proximal Video Camera is removed from the light source, avoid looking directly into the intense light provided by the light source to prevent damage to your eyes.

5. Connect the Video Coupler to the VideoPath Proximal Video Camera head. It is important that all lens surfaces are clean and dry prior to making these connections.



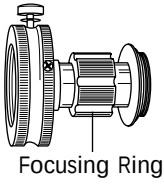
6. Connect Video Coupler to the eyepiece of the endoscope. Secure coupler/eyepiece connection by tightening the thumbscrew on the coupler.





7. White balance the VideoPath Proximal Video Camera by aiming the distal tip of the endoscope at a white surface at a distance of one to two inches. Momentarly depress the white balance button on the Proximal Video Camera light source connector. Continue aiming the endoscope at the white surface until the image flickers. Once the image flickers, the system has been properly white balanced.

8. After white balancing is completed, focus the image by adjusting the focusing ring on the video coupler.



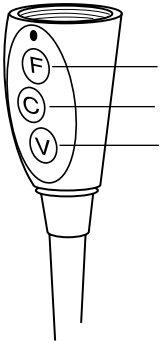
9. After the image has been properly focused, it may be necessary to further adjust the color. The VideoPath Proximal Video Camera has been preset at the factory for optimal picture quality and performance. Monitors can vary and therefore may require some fine tuning. This can be accomplished by using the controls on the monitor.

   In some cases, it may be necessary to reduce the moire effect. Moire is a phenomenon caused by an interference pixel pattern between a fiberscope and a CCD imager, and can be controlled by either slightly defocusing the image or by rotating the video coupler with respect to the eyepiece of the fiberscope.

The system is now functional. Illumination level is controlled automatically by an electronic shuttering system built into the VideoPath.

PC-20 (Model 65180):

Function Control Switches – The function control switches can be used to control a peripheral video printer. The RS-232 cable must be attached from the light source (Model VLX-20) to the video printer. The controls are as follows:



F - Freezes the image

C - Prints the image

V - Returns the system to a live video image

By utilizing these switches, the image may be captured and printed for later observation.

Electrosurgery

The user must read and understand all the instructions in the operating manuals supplied with the electrosurgical generator and associated accessories. All electrosurgical equipment must be thoroughly inspected prior to use. Only the user can determine if the condition of the electrosurgical generator and accessories is correct and safe for clinical use. The active portion of the electrosurgical accessory should always be clearly visualized before applying electrical energy to the instrument.

Caution: The chassis of the high frequency surgical equipment, if accessible, should be connected to the Equipotentiality Terminal of the VLX-20 Light Source to eliminate the potential of RF voltage potential between the two devices during electrosurgery.

1. The recurring peak voltage of the high frequency surgical equipment used should not exceed 300 Volts in any mode of operation.

2. Avoid the use of high frequency endoscopically-used accessories in the presence of flammable anesthetics or explosive gas concentrations.

Cleaning and Disinfection

Immediately after the endoscope is removed from the patient, put the lamps on stand-by by pressing the lamp ignition/standby switch. This will help maximize lamp life. Next, disconnect the video coupler from the eyepiece of the endoscope.

The VideoPath Proximal Video Camera system and all video couplers should be properly cleaned. Any debris should be wiped from the coupler, camera head and cable with a soft lint-free cloth moistened with mild soap and water. An enzymatic detergent may also be used. See the list below for compatible detergents. (Follow the dilution instructions provided by the manufacturer.)

Brand Name	Source	Usage
Endozime	The Ruhof Corp.	Follow Manufacturer's Instructions
Klenzyme	Calgon Vestal Labs	
Enzy-Clean	Burnishine Products	
Metrizyme	Metrex Research Corp.	
Enzol	J & J Medical	

Cleaning and Disinfection (Cont'd.)

Generally, the VideoPath Proximal Video Camera should only require simple cleaning between procedures. If necessary, the VideoPath Proximal Video Camera may be soaked in enzymatic cleaner or in glutaraldehyde-based disinfectants. The disinfectants are listed on the following table. It is suggested that the soaking cap be in place prior to immersing the VideoPath. Follow the manufacturer's instructions for the disinfectant being utilized.

Solution	Brand Name	Source	Usage
Gluteraldehyde	Cidex (14 Day) (2.4%)	J & J Medical	Follow Manufacturer's Instructions
	Wavicide-01 (2.5%)	Wave Energy Systems Inc.	
	Metricide (14 Day) (2.6%)	Metrex Research Corp.	

After soaking, the VideoPath Proximal Video Camera should be rinsed with clean water and dried prior to storage.

Instrument Storage

Make sure the instrument is clean and dry prior to storage. Do not store the instrument in an area exposed to extreme temperatures, high humidity or direct sunlight. The storage area should be clean and dry.

Transport/Storage environment

Ambient temperature -40°C to +50°C (-40°F to 122°F)

Relative humidity 95% max.

Servicing

Prior to returning any instrument for repair to Welch Allyn, the instrument should first undergo appropriate reprocessing/decontamination procedures for the purpose of infection control.

1. All instruments requiring repair should be shipped in the original shipping package with appropriate packing along with comments describing the instrument damage and complaint.
2. A repair/return authorization number, contact name and phone number of the individual responsible for authorizing repairs, as well as shipping address should be included.
3. Any accessories potentially related to the damage or complaint also should be included.
4. Soaking caps (if applicable) also should be returned with the instrument to check/confirm the integrity of their watertight seal.

NOTE: Instrument repairs should only be performed by an authorized Welch Allyn service facility. Welch Allyn assumes no liability for any patient/user injury, instrument damage or malfunction, or reprocessing failure due to repairs made by unauthorized personnel.

Customer Service Telephone Assistance: 1-800-535-6663

Service Information

Customers in North America should return instruments requiring service to the Welch Allyn Technical Service Department listed below, or to an authorized Welch Allyn Distributor.

Technical Service Department
Welch Allyn, Inc.
4341 State Street Road
Skaneateles Falls, NY 13153
U.S.A.
Telephone: 800-669-9771
Fax: 315-685-4653

Symptom	Possible Cause	Solution
No image.	VideoPath Proximal Video Camera not properly plugged into light source.	Advance Video Camera connector terminal into light source until it “clicks” into place.
Image is not clear.	Video Coupler not properly focused.	Adjust focusing ring on video adapter until the image is properly focused.
	Endoscope not properly focused.	Adjust focus on endoscope until image is clear.
	Lenses dirty.	Remove VideoPath Proximal Video Camera and coupler and wipe all lenses with cotton swab and alcohol.
Inadequate illumination.	Light source not turned on.	Turn power on to light source.
	Endoscope light guide connector not plugged in to light source.	Plug light guide connector into light guide port in the VideoPath light guide plug.
Light source not functioning.	Not plugged into electrical outlet.	Plug light source into 120V grounded outlet.
	Lamps burned out.	Replace lamps according to the light source instruction manual.
	Fuse is blown.	Replace fuse.
	Lamp access plate not properly reinstalled.	Check plate and reinstall properly according to the light source instruction manual.
Function Control Switches not operating.	RS-232 cable not connected between light source and video printer.	Connect RS-232 cable between light source (VLX-20) and video printer.

Welch Allyn™

Welch Allyn, Inc.
4341 State Street Road
P.O. Box 220
Skaneateles Falls, NY 13153-0220
U.S.A.
Tel.: 800-535-6663 or
315-685-4560
Fax: 315-685-3361

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